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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,627	09/22/2003	Wen-Fei Yu	10541-1869	1188
29074	7590	01/10/2006	EXAMINER	
VISTEON C/O BRINKS HOFER GILSON & LIONE PO BOX 10395 CHICAGO, IL 60610			WALBERG, TERESA J	
			ART UNIT	PAPER NUMBER
			3753	

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

TLN

<b>Office Action Summary</b>	<b>Application No.</b> 10/667,627	<b>Applicant(s)</b> YU ET AL.	
	<b>Examiner</b> Teresa J. Walberg	<b>Art Unit</b> 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.  
 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-11 and 13-16 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1,3-11 and 13-16 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3, 4, 6, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3, 4, and 6 depend from claim 2 and claim 13 depends from claim 12, but claims 2 and 13 were canceled in the amendment of 13 October 2005. Since the scope of claims 3, 4, 6, and 13 cannot be determined these claims have not been examined on the merits in this office action.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 9, 10, and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Fang et al (2003/0209344).

Fang et al disclose (see para. 0031) a heat exchanger for cooling distinct fluids including an oil cooling section (para. 0031, line 17), first and second manifolds (22), a plurality of tubes (28) connected to the manifolds at each end and defining an oil flow passage, the tube being extruded metal (para. 0066, line

2) and including an outer wall and fins (para 0049, lines 9-10) extending into the oil flow passage, the tube including webs (para. 0051, lines 4-5) that divide the oil flow passage into multiple discrete flow paths, fins (34) interposed between adjacent tubes, another section of the exchanger being a condenser (para. 0031, lines 16-17), and the performance ratio of the tubes being between about 3.9 and 8.5 (para. 0009 teaches a hydraulic diameter of 0.55 to 2.5 mm, which would appear to equal a performance ratio of 1.6 to 7.27).

Note that the term "performance ratio" does not appear to be conventionally used in this technology. However, the formula applicants list for the "performance ratio" is mathematically related to the formula for "hydraulic diameter", which is conventionally used in this technology. Since the "performance ratio" ( $R$ ) equals the wetted perimeter ( $P$ ) divided by the cross sectional area ( $A$ ), ( $R=P/A$ ), while the "hydraulic diameter" ( $D$ ) equals four times the cross sectional area ( $A$ ) divided by the wetted perimeter ( $P$ ), ( $D=4A/P$ ), it would appear that the "performance ratio" equals four divided by the hydraulic diameter. If this is incorrect, the applicants are requested to provide clarification.

Note that the protrusions into the flow passage are considered to be fins, since applicant has not set forth any specific shape or length that the fins are required to have.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fang et al (2003/0209344).

Fang et al disclose a heat exchanger as claimed with the exception of stating that the wetted perimeter is greater than 100 millimeters. However, it would have been obvious to use a wetted perimeter length of greater than 100 millimeters, or any other desired length, for the tubes in the heat exchanger of Fang et al based on the intended use and on the other proportions of the other heat exchanger.

7. Claims 7, 8, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fang et al (2003/0209344) in view of Rhodes (6,213,158).

Fang et al disclose a heat exchanger as claimed with the exception of a formed metal sheet within the oil passage used as a turbulator. Rhodes teaches the use of formed metal sheets as turbulators in heat exchange passages. It would have been obvious in view of Rhodes to use a turbulator in the heat exchanger of Fang et al to increase turbulence and thus increase the heat transfer.

8. Applicant's arguments filed 13 October 2005 have been fully considered but they are not persuasive.

Applicant argues that the Fang et al document does not show fins extending into the oil flow passage. However, applicant's claims do not set forth any specific shape or proportions that the fins are required to have. The protrusions disclosed as extending into the flow passage in the Fang et al document are considered by the examiner to be fins. Note that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

If the claims were to be amended to require that the fins be elongated with a rectangular cross section, the previously cited patent to Varga and the newly cited patent to Huggins would be considered relevant.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Huggins is cited to show internal fin structure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 571-272-4790. The examiner can normally be reached on M-F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Blau can be reached on 571-272-4406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Teresa J. Walberg  
Primary Examiner  
Art Unit 3753

tjw